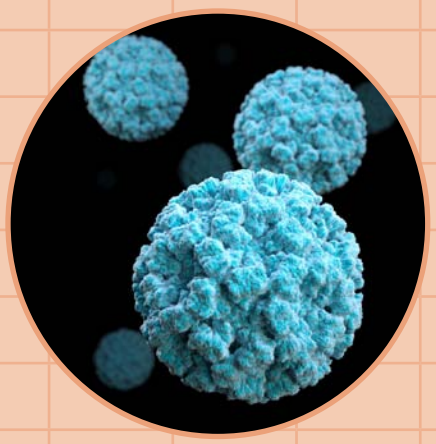
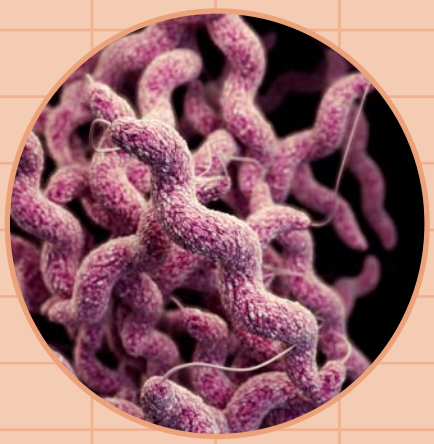
FoodCORE Norovirus, Other, and Unknown (NOU) Metrics Rationale and Intent

The FoodCORE performance metrics are a list of measurable activities covering diverse aspects of outbreak response. These activities span from outbreak surveillance and detection through investigation, response, control, and prevention measures. Using the metrics*, each center provides data about the burden, timeliness, and completeness of foodborne disease activities related to the key areas of activity. The rationale and intent of these metrics are for investigation activities for norovirus, other enteric disease pathogens, such as *Campylobacter, Cryptosporidium,* or *Giardia*, and outbreaks of unknown etiology. Collectively, these are referred to as the NOU metrics, for norovirus, other etiologies, and unknown etiologies. Other etiologies are enteric illnesses with determined etiology that are not *Salmonella,* Shiga toxin-producing *Escherichia coli, Listeria,* or norovirus. Unknown etiologies are enteric illness with no determined/identified etiology from case, product, or environmental testing to indicate the etiologic agent. This can be because no specimen or sample yielded an isolate or other positive result, and would also include investigations where no specimens or samples were collected.

Sections



Norovirus



Campylobacter

Unknown Etiology

* http://www.cdc.gov/foodcore/metrics.html

National Center for Emerging and Zoonotic Infectious Diseases

Division of Foodborne Waterborne, and Environmental Diseases

CS251108

Total NOU Investigations

1a. Total number of all Norovirus, Other Etiology, or Unknown Etiology (NOU) Investigations

- Intent: To allow the evaluation of the burden of clusters and investigational needs.
- Note: This metric includes all NOU investigations; it is not limited to foodborne or point-source, but includes person-to-person NOU investigations as well.

1b. Total number of foodborne or point-source NOU investigations

- Intent: To allow the evaluation of the burden of clusters and investigational needs.
- Note: This metric includes NOU investigations where the primary mode is determined to be foodborne or point-source (i.e. waterborne, zoonotic, environmental, or indeterminate/other/unknown) at the conclusion of the investigation.

1c. Total number of person-to-person NOU investigations

- Intent: To allow the evaluation of the burden of clusters and investigational needs.
- Note: This metric includes NOU investigations where the primary mode is determined to be person-to-person at the conclusion of the investigation.

Laboratory-based Metrics

Rationale: The intent of these metrics is to evaluate the timeliness and completeness/availability of laboratory surveillance and subtyping data for norovirus, other etiology, and unknown etiology investigations. These metrics include all NOU investigations; they are not limited to foodborne or point-source, but include person-to-person NOU investigations as well. These metrics can be used to determine if there are gaps in the diagnostic specimen handling and testing processes. If gaps are identified, knowing the detailed circumstances around the gap will help develop targeted actions to address them specifically.

Note: These laboratory-based metrics are for laboratory testing conducted at the reporting public health laboratory. For laboratories that are not equipped to perform a certain type of testing (e.g., testing for certain viruses or parasites), the measures related to those tests would not be applicable since the completeness and timeliness of the testing would not be within the control of the reporting laboratory.

2a. Measure #(%) of all NOU investigations with clinical specimens collected and submitted to the Public Health Lab (PHL)

- Intent: To allow the evaluation of the burden and completeness of specimen submissions to the PHL that represent possible clusters or outbreaks of infection.
- Note: To be based on #1 for calculation.

2b. Measure #(%) of all NOU investigations where submitted clinical specimens were tested for GI viruses at the PHL

- Intent: To allow the evaluation of the burden and completeness of viral specimen testing at the PHL.
- Note: To be based on #2a for calculation.

2b.1. Measure #(%) of all NOU investigations where GI viral testing of specimens included testing for norovirus by real-time RT-PCR at the PHL

- Intent: To allow the evaluation of the burden and completeness of testing specimens for the detection of norovirus at the PHL.
- Note: This is a sub-measure to be based on #2b for calculation.

2b.1.1. Measure #(%) of all NOU investigations with two or more specimens confirmed positive for norovirus by RT-PCR at the PHL where at least one specimen was sequenced and uploaded to CaliciNet

- Intent: To allow the evaluation of the burden and completeness of sequencing for norovirus positive specimens.
- Note: This is a sub-measure to be based on #2b.1 for calculation where the denominator is the number of NOU investigations in #2b.1 with at least two positive specimens based on RT-PCR.

2b.1.1.1. Measure median days from first norovirus detection at the PHL via RT-PCR to upload of sequence to CaliciNet

- Intent: To allow the evaluation of the timeliness of norovirus sequencing at the PHL.
- Note: This is a sub-measure to be based on #2b.1.1 for calculation.

2b.2. Measure #(%) of all NOU investigations where GI viral testing of specimens included testing for other viruses (e.g., sapovirus, astrovirus, rotavirus, adenovirus) at the PHL

- Intent: To allow the evaluation of the burden and completeness of testing specimens for viruses other than norovirus (e.g., sapovirus, astrovirus, rotavirus, adenovirus) at the PHL.
- Note: To be based on #2b for calculation.

2c. Measure #(%) of all NOU investigations where clinical specimens were tested for pathogenic bacteria or their toxins, antigens, or specific antibodies at the PHL

- Intent: To allow the evaluation of the burden, breadth, and completeness of testing clinical specimens for pathogen identification.
- Note: To be based on #2a for calculation.

2c.1. Measure #(%) of all NOU investigations where bacterial testing of specimens included culture-based diagnostics at the PHL

- Intent: To allow the evaluation of the burden, breadth, and completeness of culture-based testing of clinical specimens to confirm pathogen identification.
- Note: To be based off #2c for calculation.

2c.2. Measure #(%) of all NOU investigations where bacterial testing of specimens included non-culture-based diagnostics at the PHL

- Intent: To allow the evaluation of the burden, breadth, and completeness of non-culture-based testing of clinical specimens to confirm pathogen identification.
- Note: To be based off #2c for calculation.

2d. Measure #(%) of all NOU investigations where clinical specimens were tested for parasites at the PHL

- Intent: To allow the evaluation of the burden, breadth, and completeness of testing clinical specimens for pathogen identification.
- Note: To be based on #2a for calculation.

Investigation-based Metrics

Rationale: The intent of these metrics is to evaluate response activity related to investigations. These metrics can be used to determine if there are gaps in investigational activities. If gaps are identified, knowing the detailed circumstances around the gap will help develop targeted actions to address them specifically.

3a. Measure #(%) of foodborne or point-source NOU investigations with exposure assessments conducted

- Intent: To allow the evaluation of completeness of foodborne or point-source NOU investigation activities.
- Note: This metric would indicate that initial interviews or exposure assessments were conducted with a case(s) in your jurisdiction. To be based on #1b for calculation.

3b. Measure #(%) of foodborne or point-source NOU investigations where an analytic epidemiologic study was conducted

- Intent: To allow the evaluation of conducting or participating in analytic epidemiologic investigations.
- Note: This metric would indicate that your jurisdiction was responsible for (i.e., led) or participated in analytic hypothesis testing. There may be investigations that do not warrant analytic epidemiologic studies based on hypothesis generating data. To be based on #1b for calculation.

4. Measure #(%) of foodborne or point-source NOU investigations with suspect vehicle/source identified

- Intent: To allow the evaluation of how often investigations result in identifying suspect vehicles or sources. The evaluation of suspect vehicles or sources is important because even without a confirmed source, these investigations can still contribute to the body of knowledge of risky foods, practices, or other gaps in the food safety system in order to inform prevention efforts.
- Note: There is not always a relationship between the completeness and/or timeliness of an investigation and identification of a suspect vehicle/source. To be based on #1b for calculation.

5. Measure #(%) of foodborne or point-source NOU investigations with confirmed vehicle/source identified

- Intent: To allow the evaluation of how often investigations result in identifying confirmed vehicles or sources. These investigations contribute to the body of knowledge of risky foods, practices, or other gaps in the food safety system in order to inform prevention efforts.
- Note: There is not always a relationship between the completeness and/or timeliness of an investigation and identification of a confirmed vehicle/source. To be based on #1b for calculation.

6a-e. Measures for foodborne or point-source NOU investigations with an identified vehicle/source where control measures or public health actions were taken

6a. Measure #(%) of foodborne or point-source NOU investigations with exclusion of (an) ill person(s) from high risk setting

- Intent: To allow the evaluation of excluding (an) ill person(s) within your jurisdiction to help minimize the risk to others and mitigate ongoing transmission.
- Note: High risk settings may include, but are not limited to food handling, daycare attendance, or health care work. Not all investigations will yield evidence that support taking this kind of action. To be based on #1b for calculation.

6b. Measure #(%) of foodborne or point-source NOU investigations with remediation or closure of an establishment linked to illness

- Intent: To allow the evaluation of requiring remediation of an identified gap in food safety or even closure of an establishment within your jurisdiction to help minimize the risk to others and mitigate ongoing transmission.
- Note: Not all investigations will yield evidence that support taking this kind of action. To be based on #1b for calculation.

6c. Measure #(%) of foodborne or point-source NOU investigations with educational campaigns during outbreaks (beyond individual case education)

- Intent: To allow the evaluation of conducting an educational campaign within your jurisdiction for at-risk groups to help minimize the risk to others and mitigate ongoing transmission.
- Note: Educational campaigns, beyond individual case education, may include, but are not limited to, hand washing education in a classroom or daycare or safe food handling and preparation practices. Not all investigations will yield evidence that support taking this kind of action. To be based on #1b for calculation.

6d. Measure #(%) of foodborne or point-source NOU investigations with media or public messaging (web updates, press release, etc.)

- Intent: To allow the evaluation of notifying the public about an NOU investigation to help minimize the risk to others and mitigate ongoing transmission. This applies to notifications that occurred within your jurisdiction, or that your jurisdiction participated in (e.g., confirmed or contributed information to).
- Note: Media or public messaging includes but is not limited to web updates or press releases of materials that would be available beyond the population directly impacted by a cluster or outbreak. Not all investigations will yield evidence that support taking this kind of action. To be based on #1b for calculation.

6e. Measure #(%) of foodborne or point-source NOU investigations with regulatory action (e.g. recall, hold, etc.)

- Intent: To allow the evaluation of taking a regulatory action to prevent initial or further distribution of a product associated with illness or risk of illness. This applies to regulatory actions that occurred within your jurisdiction, or that your jurisdiction participated in (e.g., confirmed or contributed information to). To be based on #1b for calculation.

- Note: Regulatory action includes, but is not limited to product recalls, holding product from distribution, or initiating other restrictions of sale or production. Not all investigations will yield evidence that support taking this kind of action. To be based on #1b for calculation.

7. Measure #(%) of foodborne or point-source NOU investigations with link to a common location of exposures (e.g., restaurant, food establishment, nursing home, etc.) where an on-site environmental health assessment was conducted

- Intent: To allow the evaluation of how often environmental health assessments are conducted within your jurisdiction as part of an NOU investigation.
- Note: Not all investigations will yield evidence that support taking this kind of action.

8. Measure #(%) of foodborne or point-source NOU investigations where food or environmental sample was collected for testing

- Intent: To allow the evaluation of how often food or environmental samples are collected for testing within your jurisdiction as part of an NOU investigation.
- Note: Not all investigations will yield evidence that support taking this kind of action. To be based on #1b for calculation.

9. Measure #(%) of foodborne or point-source NOU investigations where environmental health, agriculture, regulatory, consumer protection, or food safety program staff were contacted

- Intent: To allow the evaluation of how often environmental health, agriculture, regulatory, or food safety program staff within your jurisdiction were engaged in NOU investigation activities.
- Note: Not all investigations will yield evidence that support taking this kind of action. Additionally, contacting partners during an investigation does not necessarily imply that a regulatory action would be indicated or taken. To be based on #1b for calculation.

Outbreak-based Metrics

Rationale: The intent of these metrics is to evaluate outbreak reporting activity. These metrics can be used to determine if there are gaps in outbreak reporting. If gaps are identified, knowing the detailed circumstances around the gap will help develop targeted actions to address them specifically.

10. Measure #(%) of all NOU outbreaks where NORS form was completed

- Intent: To determine the burden and completeness of outbreak reporting through NORS.
- Note: It is understood that this value may not be 100% during specific reporting periods if an outbreak investigation is ongoing and therefore not ready to be submitted to NORS.
- Note: To be based on #1a for calculation.